

isNet DPMon & PAMon

Profibus Monitor Module

User manual

UNIFIED FIELD COMMUNICATION



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isNet Line



isNet Lite

+

PROFIBUS DP



isNet DP2



isNet DP



isNet DPMon

PROFIBUS PA



isNet PA4



isNet PA2



isNet PAMon

Foundation
Fieldbus



isNet FFMon

HART

isNet PNGate



isNet H@rt8



isNet H@rt4

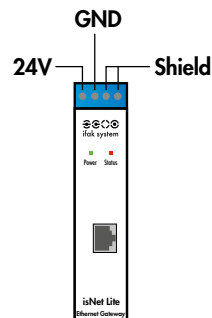
1 isNet Lite

The Ethernet-Gateway isNet Lite provides an efficient data exchange. Up to five fieldbus-specific modules can be connected, a free combination of PROFIBUS, FOUNDATION FIELDBUS or HART modules is approved. The PROFIBUS modules are equipped with one or two bus interfaces (single/dual module) and the HART modules are equipped with 4 or 8 HART-channels. The Ethernet port 100BASE-TX supports transfer rates of 10 Mbit/s and 100 Mbit/s.

Depending on the customer-specific needs the gateway can be supplied with up to five PROFIBUS modules which results in a maximum of 10 PROFIBUS buses. Also the gateway can be supplied with up to five HART modules, which results in a maximum of 40 HART-channels. These HART channels can be used simultaneously, because each HART channel has its own HART master. It is also possible to connect up to five monitoring modules for PROFIBUS PA, DP and FOUNDATION FIELDBUS.

The Ethernet-Gateway was developed for the use in an industrial environment. It needs a 24V power supply and will be mounted on a top-hat rail. The gateway and the fieldbus specific modules are fanless and do not have any moving parts at all. They are built for a long and enduring lifespan.

The isNet Lite is fully integrated in our driver concept of the fieldbus components isHART and isDP. You can connect to the different networks through our API which is included in the Driver-DLL. The applications which were designed for the HART- and PROFIBUS-Interface (isHRT USB, isPro USBx12) can be used with the Ethernet-Gateway. A userfriendly webinterface is implemented which can be used for the start-up. You can also use the web-interface to check the PROFIBUS modules and a connected network for its right function.



1.1 Delivery Content

Hardware, driver-, configuration-, test software on CD, documentation engl.

1.2 Technical Data isNet Lite

Technical Data	
Interface	RJ 45 (Ethernet)
Controller	ARM9 32Bit 400 MHz
RAM	32 MB
Flash	256 MB
Transmission rate	Ethernet: 10 Mbit/s – 100 Mbit/s
Driver software	Windows 98, 2000, XP, Vista, 7
Available software	isNet CommDTM, isPro CommDTM (FDT), isPro Multi-Server (OPC), OPC UA Server (FDI Communication Server)

2 isNet PAMon and DPMon

With the isNet DPMon and isNet PAMon modules the head module isNet Lite can be enhanced by new diagnosis and protocol monitor functions. The modules detect and diagnose sporadically occurring problems during data transmission on a Profibus network. The modules identify configuration problems in the transmission protocol as well as electrical faults that cause interruptions.

The DP monitor module offers one channel that can be connected to the Profibus network via a D-SUB 9 connector. The PA monitor module offers two channels working independently from each other that can be connected to the Profibus network via screw-type terminals.

Both monitor modules work totally passive; no telegrams are sent to the bus. The modules evaluate the status of all stations on the bus and provide a concise overview about it if needed. In this view the bus status of every single layer of the OSI reference model is separately detected and can also be addressed separately.

The modules also offer a protocol monitor, an integrated 200 MHz oscilloscope and an extensive analysis of statistical data, e.g. error counters or average time intervals. Long-term monitoring allows autonomous operation for a long period of time even if the Net Lite is not connected to the PC. The protocol file is saved on a memory card and can later be downloaded to a PC.

2.1 Delivery content

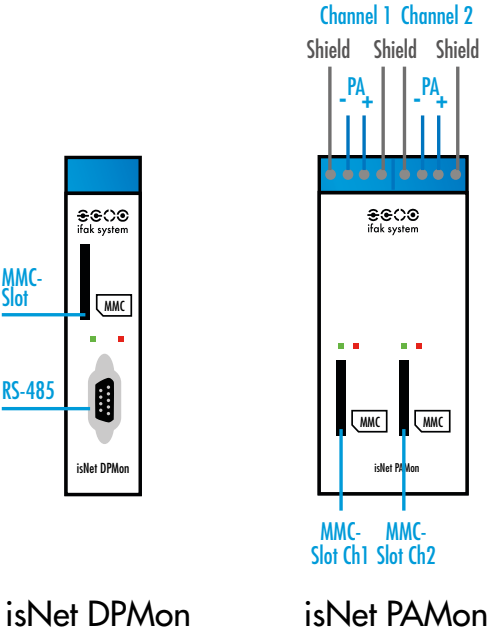
isNet DPMon or PAMon, driver, configuration and testsoftware on the CD, documentation english, isField Diagnosis DTM

2.2 System requirements

PC or Laptop with Windows 2000, XP, Vista or 7 32bit.

2.3 Technical details isNet PAMon and DPMon

Technical Data	isNet DPMon	isNet PAMon
Connectors	RS-485 Buchse	2 screw type terminals
Measures	22mm x 86mm x 110mm	45mm x 86mm x 110mm
Transmission rate	9,6 kBit/s - 12 Mbit/s	31,25 kBit/s
Driver software	Windows 2000, XP, Vista, 7	
Delivery content	Hardware, Driver-, Configuration- and Testsoftware; Documentation german and english on CD	
Available software	isNet PbMon DTM, isField Diagnosis	



2.4 Configuration

3 Software Installation

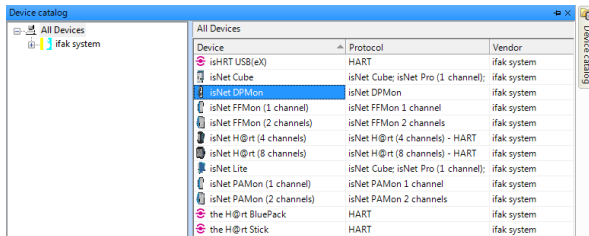
You will find PACTware and the isNet PbMon DTM on the CD-ROM. The isField Diagnosis DTM is a part of the isNet PbMon DTM. It is compatible to FDT 1.2.1.

3.1 Steps of Installation

1. PACTware 4.0
2. isNet PbMon DTM



4 isNet PbMon DTM

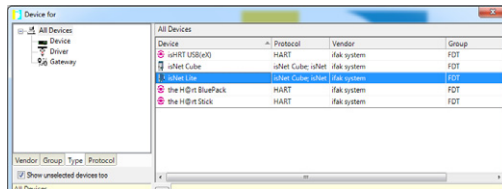


After you installed PACTware and the isNet PbMon DTM you can start it. The device database will be updated. The device database shows all installed device DTMs.

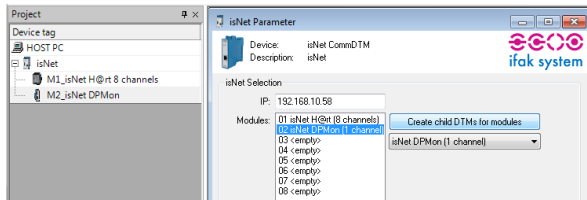
You will see the following ifak system DTMs: isNet Lite, isNet DPMon, isNet PAMon and isNet FFMon.



There are 2 different possibilities for adding a device to a project. You can either use drag & drop and pull the DTM in your project or you can use the „Add device“ function.

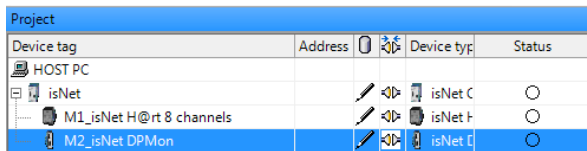


You can choose the right device DTM in this dialog and add it to your project.

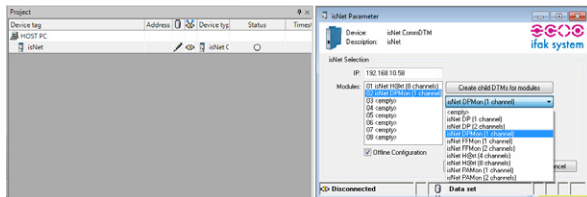


If you perform a double click on the added isNet Lite, the configuration dialog will open.

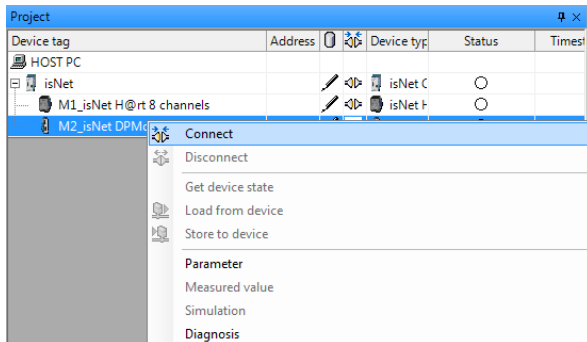
All isNet Lite will be found and the attached modules will be recognised and listed. When you click on „Add Child DTMs“ all needed DTMs will be add to your project.



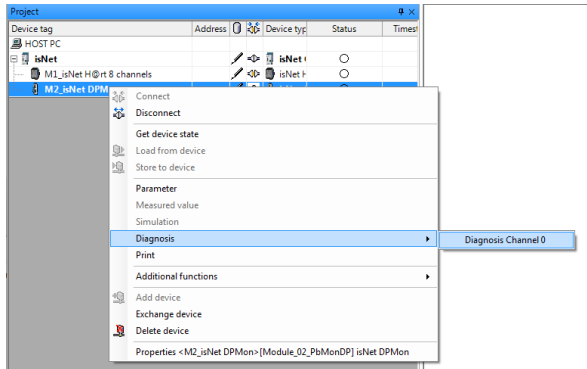
As you can see all devices have been added to your project.



Alternatively, you can configure your devices offline. Check the *Offline Configuration* Box, add the modules in the right order from the drop-down menu and click on *Create Child DTMs* when you are done.

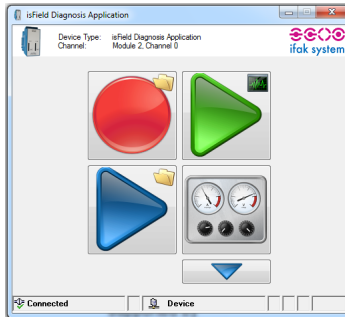


Connect with the module.



If you right click on the connected monitoring module you will see a list of different options. The Diagnosis DTM will be started by choosing *Diagnosis -> Diagnosis channel*.

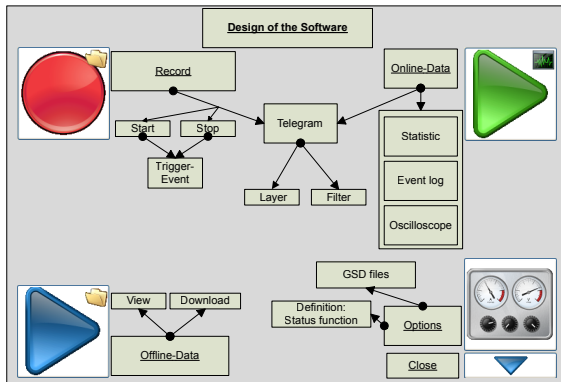
5 The isField Diagnosis DTM



After starting the Diagnosis DTM you will see this Dialog.

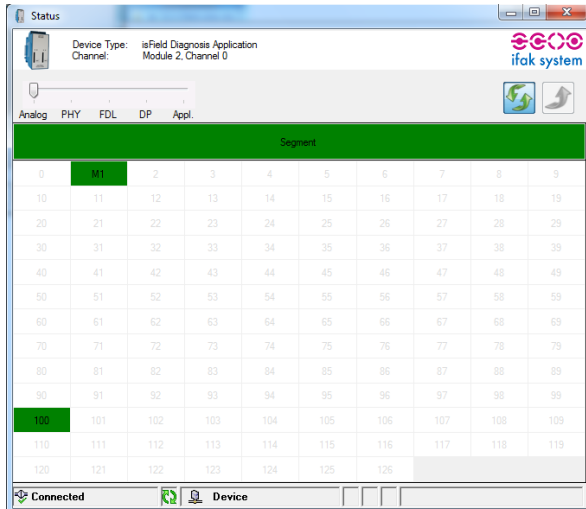
You will see 5 buttons.

Record, Online Data, Offline Data, Options and Exit.
By clicking the buttons you will get to the different dialogs.



This picture shows you the design of the isField Diagnosis DTM software.

5.1 Online Status



This is the online data view. All PROFIBUS members will be displayed. Preceding PROFIBUS masters are indicated by an „M“.

The color green indicates that everything is within its expected range. Yellow would show you a warning and red would show you an alarm. You can define different events for the colors red and yellow.

You can choose the different layers with the slider.

You can retrieve the status information static or dynamically.

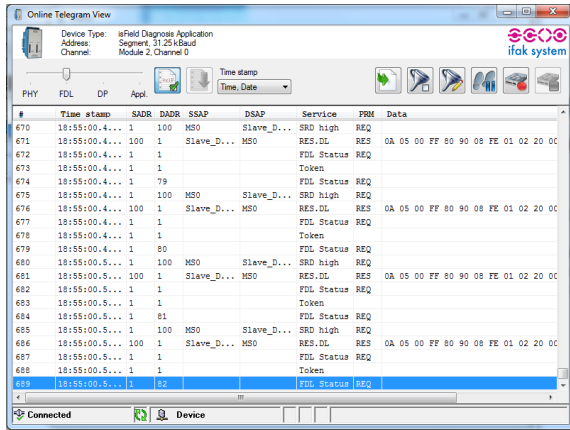


The double arrow is for dynamic update and



the single arrow for static update.

5.2 Online-Telegram-View



If you click into the telegram windows it will stop to update the new telegrams.

If you choose the layer *PHY* you will only see this columns: running number, timestamp and data. Layer *DP* shows the following columns: running number, timestamp, source- and destination address, service, PRM and data. The layer *APP* shows these informations: running number, timestamp, source- and destination address, service address, PRM and data.



You can save the telegrams by clicking on the record button.



You will reach the filter options by clicking on the filter button.



Activate the filter options with this button. If active, the box is checked.

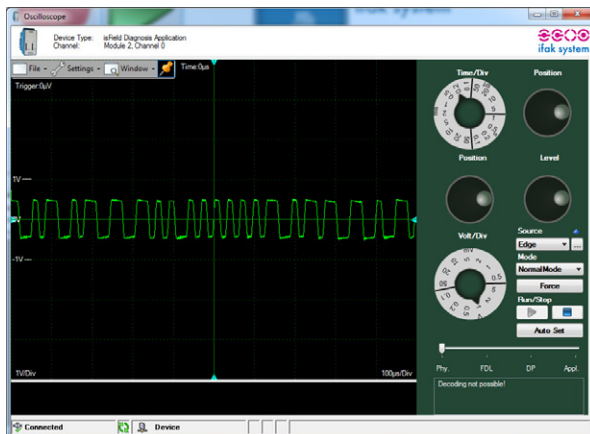


You can switch between hexadecimal and decimal view with this button.



If you would like to get to the latest telegram you have to click this button.

5.3 Oscilloscope-Function



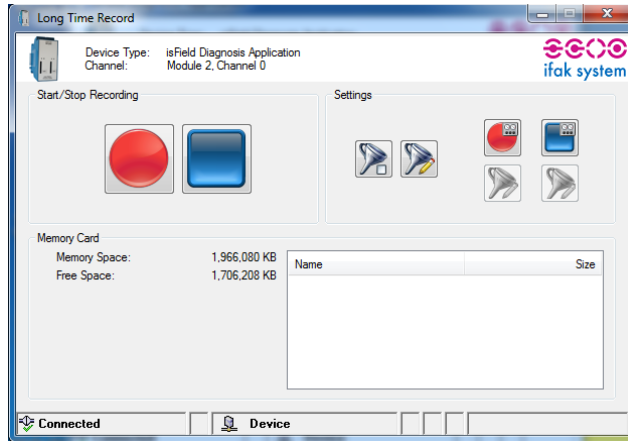
You see an oscilloscope which optical and functional equals a hardware oscilloscope. It has integrated message decoding, can detect bus faults and present them in a statistical summary and arbitrary user events can be defined which can be stored in an event log. You have options for time, level, trigger level. As source you can select falling or rising edge, filter (same functionality as described before) and threshold value.

The oscilloscope has 2 modes: normal mode and single mode. The single mode gives you a snapshot of a trigger event and the normal mode is like a normal continuous oscilloscope.

The button force has the same functionality like the button force on a hardware oscilloscope.

While you are using the oscilloscope, the telegrams will be displayed and decoded under the graph and in the windows right to the graph.

5.5 Recording-Function



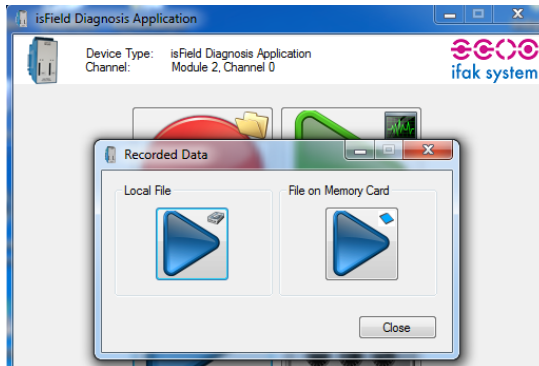
If you start a recording you can choose a file name with 8.3 characters and a destination.

After you have typed the file name and clicked **OK** the recording will start immediately.

The recording lasts as long as there is space on the memory card, as long as no trigger event is reached or as long as you do not stop it. The oscilloscope has a memory depth of up to 1 mega samples (in Singelshot mode).

You can load the file directly with in the isField Diagnosis DTM software or you can download it to your PC and look at it later or send it to a specialist. To display the recorded data you have to press the button for the offline data in the start menu of the isField Diagnosis DTM software.

5.6 Offline-Data-View

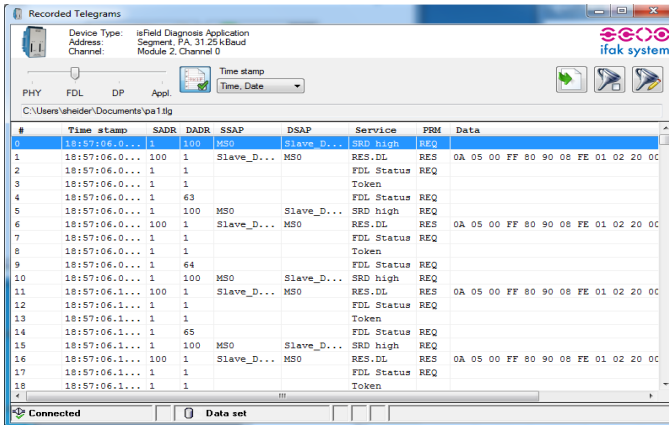


You will see this dialog. You can open local files and files from the MMC card.

If you want to open a file from the MMC card all files on the card will be shown and you can select the one you would like to open or to download to your PC.

You will get a similar view as you have seen in the online telegram view.

5.7 Offline-Telegram-View



Recorded Telegrams

Device Type: isField Diagnose Application
Address: Segment PA 31.25 kBaud
Channel: Module 2, Channel 0

Time stamp
Time, Date

PHY FDL DP Appl

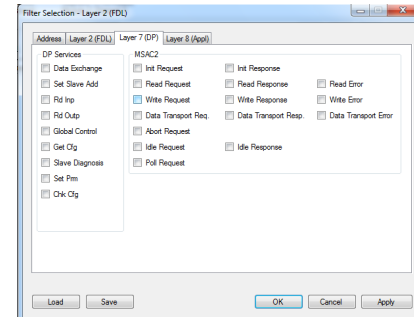
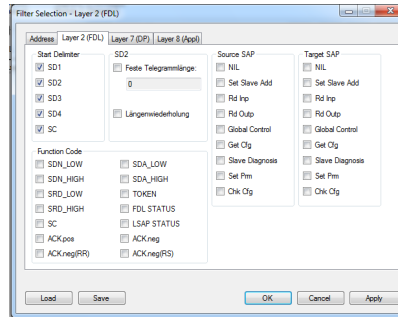
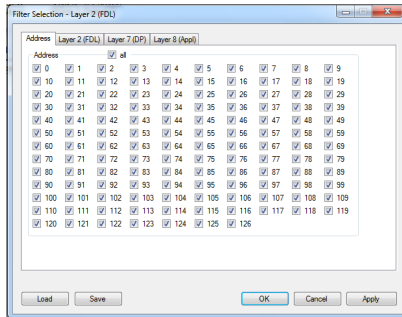
C:\Users\ahelden\Documents\ipa1.tlg

#	Time_stamp	SADR	DADR	SSAP	DSAP	Service	FPM	Data
0	18:57:06.0...	1	100	MS0	Slave_D...	SRD high	REQ	
1	18:57:06.0...	100	1	Slave_D...	MS0	RES.DL	RES	0A 05 00 FF 80 90 08 FE 01 02 20 0C
2	18:57:06.0...	1	1			FDL Status	REQ	
3	18:57:06.0...	1	1			Token		
4	18:57:06.0...	1	63			FDL Status	REQ	
5	18:57:06.0...	1	100	MS0	Slave_D...	SRD high	REQ	
6	18:57:06.0...	100	1	Slave_D...	MS0	RES.DL	RES	0A 05 00 FF 80 90 08 FE 01 02 20 0C
7	18:57:06.0...	1	1			FDL Status	REQ	
8	18:57:06.0...	1	1			Token		
9	18:57:06.0...	1	64			FDL Status	REQ	
10	18:57:06.0...	1	100	MS0	Slave_D...	SRD high	REQ	
11	18:57:06.1...	100	1	Slave_D...	MS0	RES.DL	RES	0A 05 00 FF 80 90 08 FE 01 02 20 0C
12	18:57:06.1...	1	1			FDL Status	REQ	
13	18:57:06.1...	1	1			Token		
14	18:57:06.1...	1	65			FDL Status	REQ	
15	18:57:06.1...	1	100	MS0	Slave_D...	SRD high	REQ	
16	18:57:06.1...	100	1	Slave_D...	MS0	RES.DL	RES	0A 05 00 FF 80 90 08 FE 01 02 20 0C
17	18:57:06.1...	1	1			FDL Status	REQ	
18	18:57:06.1...	1	1			Token		

Connected Data set

In the offline view, you have the same options, the same columns, the same filter menus as in the live view.

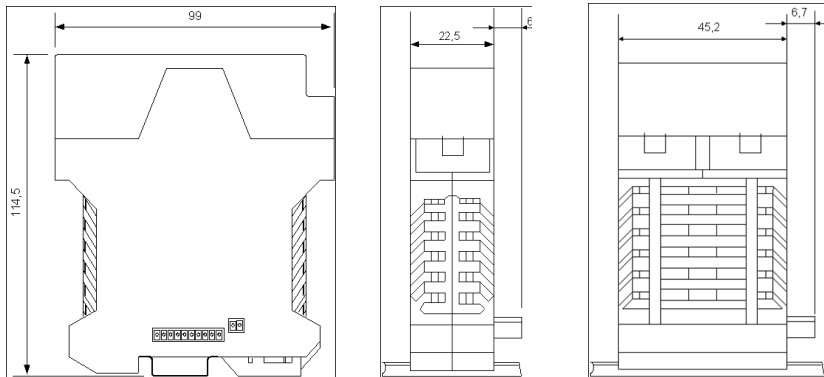
6 Filter and Triggerevents



For every layer, you can define Filter indepentently. For each layer, only the appropriate filter variables are shown.

7 Dimensional Drawing

Dimensional drawing of 1 and 2 channel module.



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